ABSTRACT OF THE DISCLOSURE

A system and method for scheduling jobs in a multiprocessor machine is disclosed. The status of CPUs on node boards in the multiprocessor machine is periodically determined. The status can indicate the number of CPUs available, and the maximum radius of free CPUs available to execute jobs. Memory allocation is also monitored. This information is provided to a scheduler that compares the status of the resources available against the resource requirements of jobs. The node boards and CPUS, as well as other resources such as memory, are arranged in hosts. The scheduler then schedules jobs to hosts that indicate they have resources available to execute the jobs. If none of the hosts indicate they have resources available to execute the jobs, the scheduler will wait until the resources become available. A best fit of job to resources is attained by scheduling jobs to hosts that have the maximum number of free CPUs for a radius corresponding to the CPU radius requirement of a job. Once the job is scheduled to a host, it is dispatched to a host and resources required to execute the job are allocated to the job at the host.